COSMIC

GUERILLA

Operation, Maintenance and Service Manual

UNIVERSAL

SUPER VIOLENCE

CONTENTS

REFERENCE DRAWING

— WHEN ORDERING PARTS —

Since each component part is indicated by block, definitely specify both the corresponding Fig. No. and part No. within the Fig. when placing an order for it.

I. FEATURES OF THIS MACHINE

1. The game packs in excellent features capturing the hearts of players.

2. The lever control system is simple to handle.

3. At the flick of a dip switch, you can select among extended play, the number of laser guns and time of appearance of an additional laser gun, etc.

4. High score for the day is always displayed on the screen.

5. Finely designed cabinet and fascinating acoustic effects.

II. HOW TO HANDLE AND MAINTAIN THIS MACHINE

1. Since the UNIVERSAL's COSMIC GUERILLA employs a color TV receiving set, be careful not to shake it during transit and when carrying it about.

2. Install it at a location which is not exposed to direct sunlight. In order to prevent the inside temperature rising, avoid as much as possible a location near a heater, etc.

3. Since the grounding terminal is visible, be sure to connect it to a grounding conductor.

4. Insert the power cord into the outlet and turn on the switch.

5. Even if the solid-state module seems to be out of order, do not check the circuit by means of a circuit tester, etc., since the internal voltage of the tester, etc. may sometimes break down the IC.

6. Make sure the machine is well ventilated. If the temperature of the IC and transistor is lower than 60°C, they function normally and may be considered reliable. If it exceeds 60°C, their performance cannot be guaranteed.

7. Make sure that the connector, etc. is not disconnected.

8. Whenever connecting the power cord of the solid-state module to, or disconnecting it from, the outlet, be sure to turn the power off.

9. Although the products of UNIVERSAL are manufactured with the utmost care, they may develop malfunctions when used for long periods. So, be sure to check this machine daily.

III. HOW TO PLAY

1. Drop in a coin when playing by yourself. Drop in two coins when playing with a friend.

2. When pressing either one- or two-player button after inserting a coin or two, the game starts. Play it by handling a lever for moving the laser guns from side to side and a FIRE button.

3. UFO
    UFO appears flying behind the guerillas as they race towards the front of the screen. Here's your chance to shoot the UFO down and add up points. But if you get too absorbed in it, you expose your laser guns to danger. When you hit the UFO, your score — either of 50, 100, 150 or 200 up to 300 points — is displayed at random.

4. Guerillas
    The guerilla rushes towards your block from both sides to take it away while bombing. When the block disappears, he tries to take away the central laser gun to his position.
    They are your targets. Wipe one off and your score piles up. Depending on the type of guerilla you get 20, 40, 50, 60 and 100. When you destroy all the guerillas on the screen, a new bunch of guerillas appears closer to your laser guns, making the game more and more difficult.

5. Station
    There are two stations for protecting your laser guns from the guerillas' direct assault. The point is to wipe off as many guerillas as possible. Your stations will be gradually destroyed by missiles launched by the guerillas. Be careful! As each new group of guerillas reappears, your destroyed stations come back on the screen.

6. Laser guns
    You can dodge the guerillas by moving your laser guns sideways with the lever controller knob. Press the FIRE button to launch the laser missiles. Hit a guerilla and it vanishes with a horrifying shriek. The key to mastering the game is skillful operation of the laser gun and well-timed missile launchings. When each laser gun is destroyed, a reserve gun at the left bottom of the screen appears and the game continues. (Play by turns when playing with a friend).

7. Reserve guns
    The remaining number of laser guns is displayed at all times. The game continues until all the laser guns are destroyed. If your score reaches a certain level, you are awarded another stock of laser gun as a bonus.

    — The number of laser guns and the setting of bonus points, etc. can be selected with dip switches.

8. Block
    It protects the central laser gun. If the guerilla is shot before he takes away the block, it returns to its location.

9. Mutant mole
    It appears every time you score 500 points, attacking your laser guns.

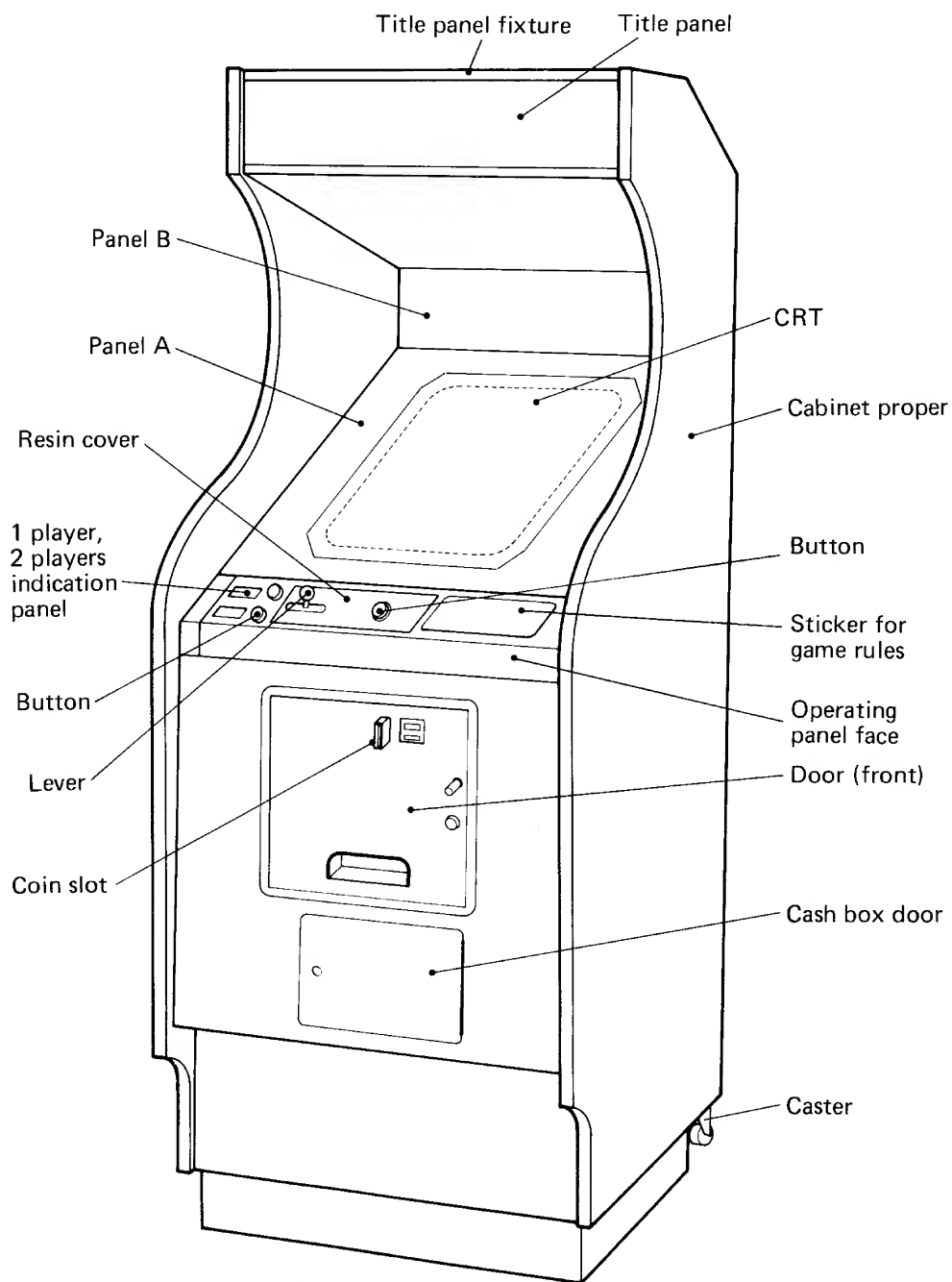# IV. NOMENCLATURE OF EACH PART

A. NOMENCLATURE OF CABINET PARTS

Title panel fixture   Title panel

Panel B

CRT

Panel A

Cabinet proper

Resin cover

1 player,
2 players
indication
panel

Button

Sticker for
game rules

Button

Operating
panel face

Lever

Door (front)

Coin slot

Cash box door

Caster

Fig. 1-1   Nomenclature of Cabinet Parts

B. DRAWING OF CIRCUIT BOARD MOUTING POSITION

TV circuit board
Main circuit board
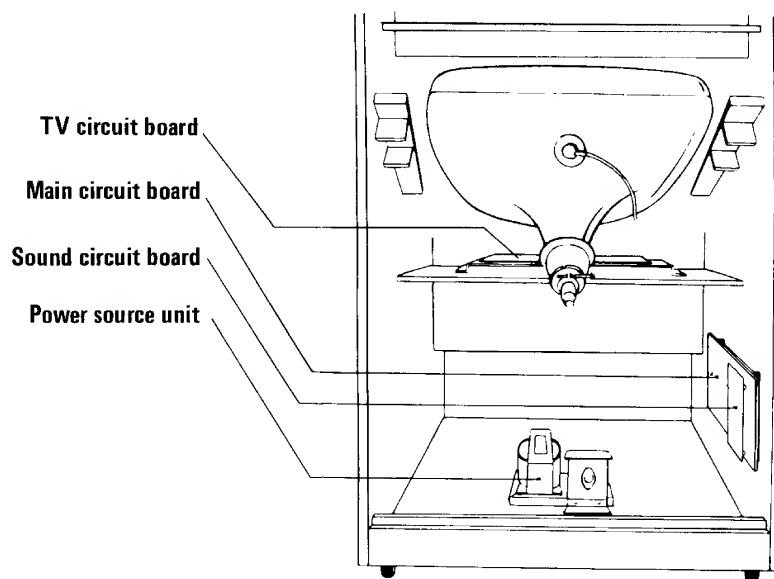Sound circuit board
Power source unit

Fig. 2-1   Circuit Board Mounting Positions

Main circuit board and its container
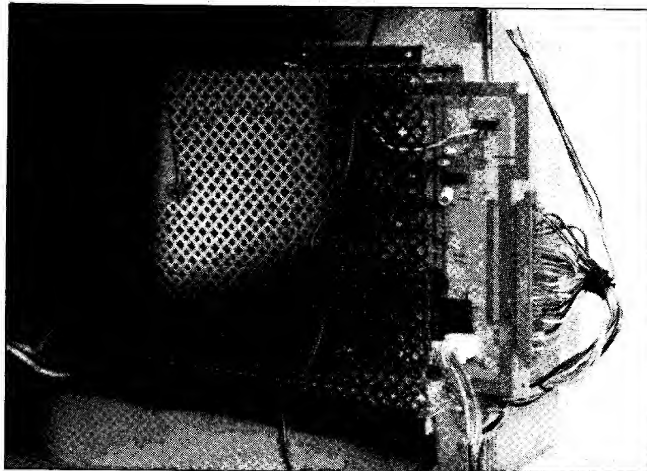

Fig. 2-2   Side View of Circuit Board Mounting Positions

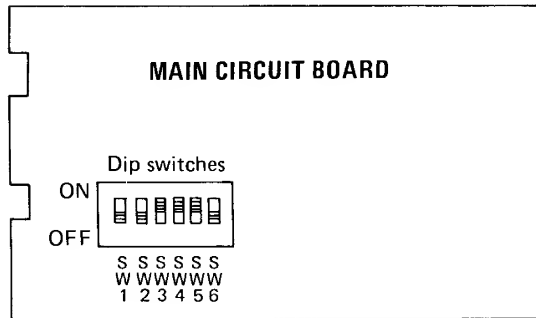## C. POSITIONS OF DIP SWITCHES AND VOLUME CONTROLLER KNOBS

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┌─────────────────────────────────────┐
│                                       │
│         MAIN CIRCUIT BOARD            │
│                                       │
│                                       │
│         Dip switches                  │
│      ON ┌──────────────┐              │
│         │ ▯ ▯ ▯ ▯ ▯ ▯ │              │
│     OFF └──────────────┘              │
│         S S S S S S                   │
│         W W W W W W                   │
│         1 2 3 4 5 6                   │
│                                       │
└─────────────────────────────────────┘
```

Fig. 3-1   Positions of Dip Switches

a) Setting the option (dip switches)

COSMIC GUERILLA is designed to have various operations and options set by the ON-OFF combinations of the dip switches. When starting a game, choose any desired game option and set the dip switches accordingly.

1. Setting the number of laser guns according to score:
(Dip switches SW1, 2)

Score	SW1	SW2
2000	OFF	OFF
1500	ON	OFF
1000	OFF	ON
0	ON	ON

(Set at 2,000 points when shipped)

2. Setting the game charge:

Credit	SW3
1 coin 1 play	ON
1 coin 2 plays	OFF

3. Setting the number of laser guns:

Number of laser guns	SW4
3	ON
5	OFF

(Set at 3 laser guns when shipped)

4. Change-over setting of the mode of game (SW5):
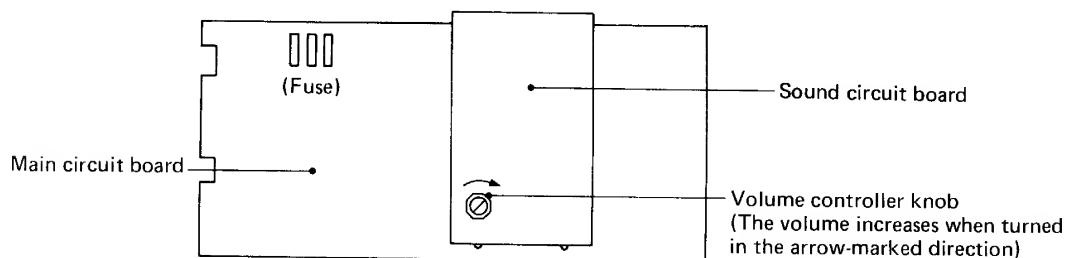The game may be enjoyed either as an upright or table type.
(When used as a table type for 2-player action, the table turns over.)

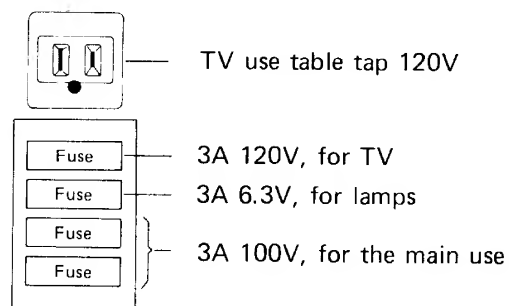For upright use . . . . ON
For table use . . . . OFF

(Be sure to place SW6 in the OFF position at all times, since it is not related to the game.)

b) Volume controller knob

Main circuit board

(Fuse)

Sound circuit board

Volume controller knob
(The volume increases when turned
in the arrow-marked direction)

Fig. 3-2   Position of Volume Controller Knob

c) Fuses in the power unit

TV use table tap 120V

Fuse — 3A 120V, for TV

Fuse — 3A 6.3V, for lamps

Fuse
Fuse — 3A 100V, for the main use

Fig. 3-3   Fuses in the Power Unit

VI. PARTS CATALOG

A-1 COMPONENT PARTS RELATED TO CABINET (OUTSIDE)
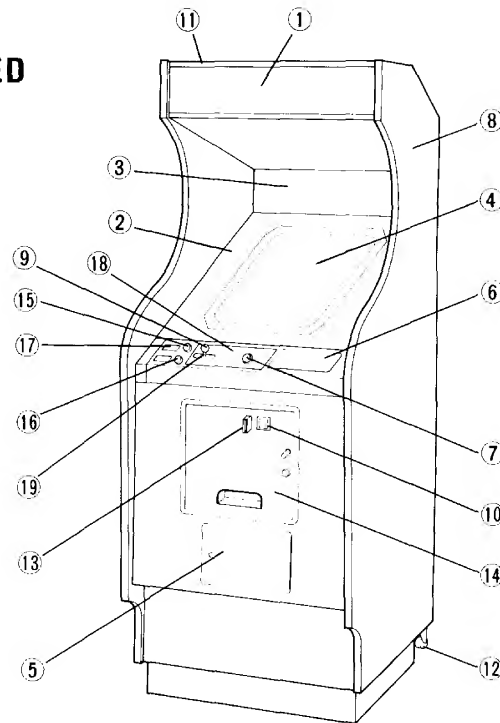
Fig. 5-1 Component Parts Related
to Cabinet (Outside)

OUTSIDE CABINET PARTS LIST

Ref. No.	Name
1	Title panel
2	Illustrated glass A
3	Illustrated glass B
4	CRT
5	Cash box door
6	Sticker for game rules
7	Push button (Fire)
8	Cabinet proper
9	Knob 32-Dim.
10	Coin indication panel
11	Title panel fixture
12	Caster
13	Coin slot
14	Main door
15	Push button (1 player)
16	Push button (2 players)
17	1 or 2 players indication panel
18	Lever indication panel
19	Control lever (general name)

A-2 COMPONENT PARTS RELATED TO CABINET (INSIDE)
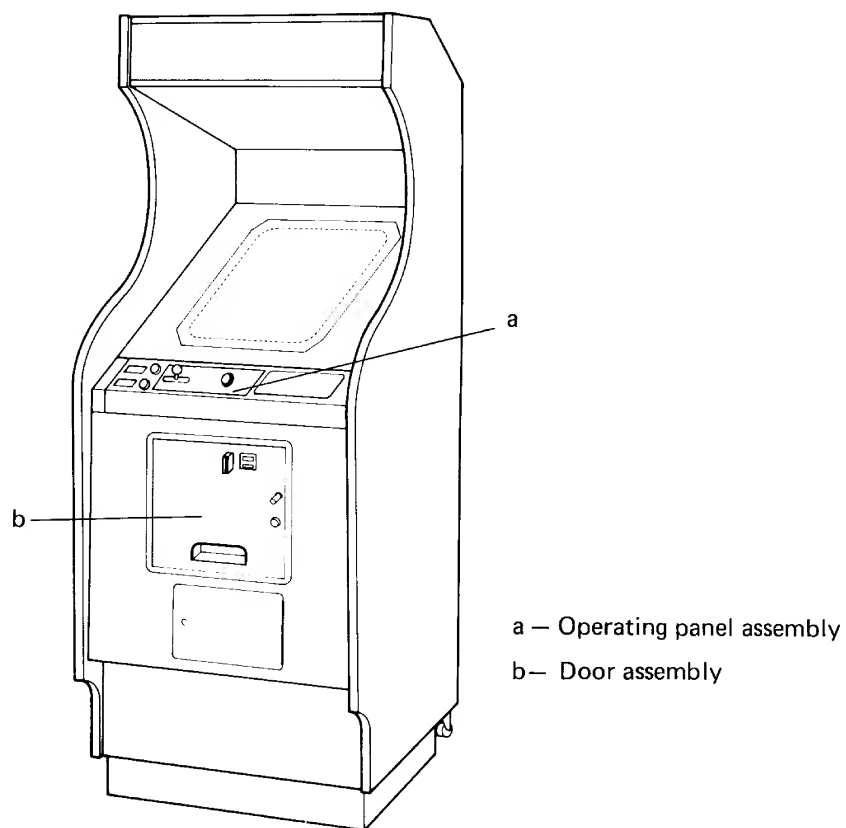
a — Operating panel assembly

b— Door assembly

Fig. 5-2   Component Parts Related to Cabinet (Inside)

a) Operating panel assembly

Switch ass'y for 2 players   Lever ass'y

Miniature lamp   Switch ass'y for 1 player   Fire button switch ass'y
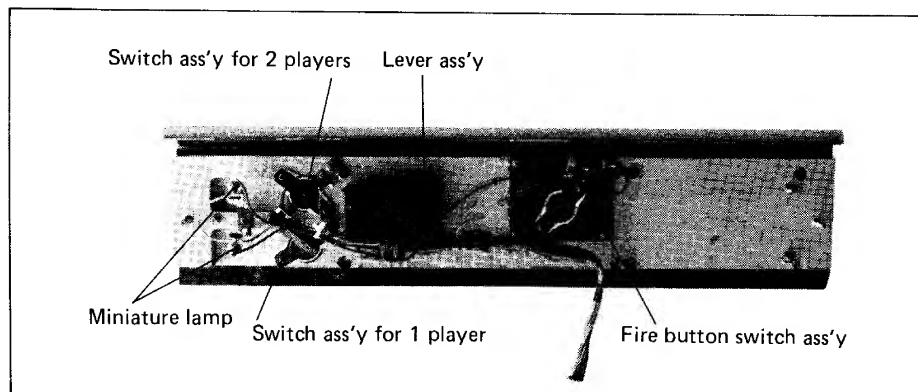
Fig. 5-3   Operating Panel Assembly
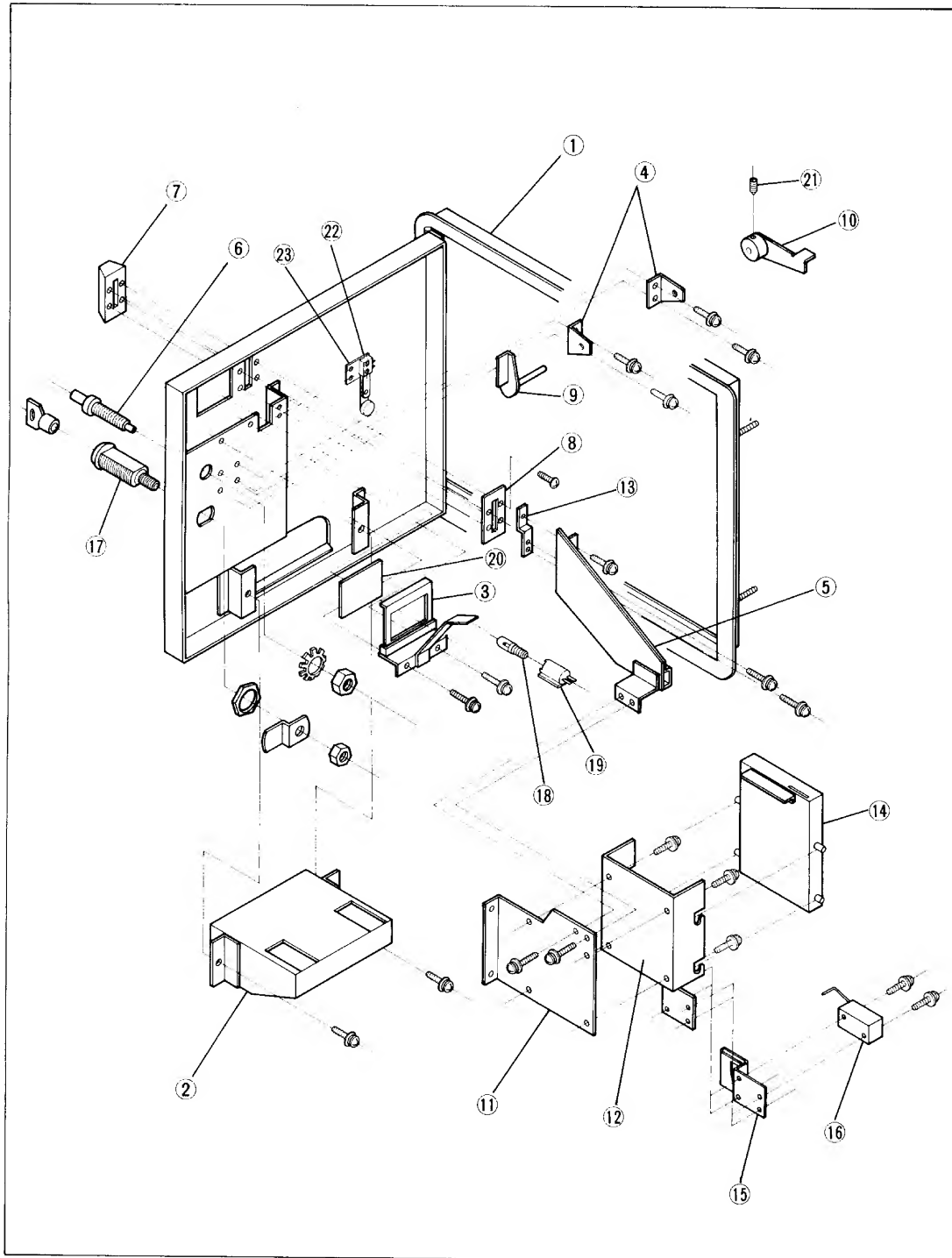
b) Door assembly

Fig. 5-4   Inside View of Rejector Assembly

REJECTOR ASSEMBLY PARTS LIST

Ref. No.	Name
1	Main door
2	Returning soucer
3	Lamp & plastic plate bracket
4	Bearing
5	Coin slot shute
6	Returning button
7	Coin slot
8	Slot plate
9	Transmission shaft
10	Rotary bracket
11	Rejector bracket
12	Rejector case
13	Coin slot shute holder
14	Rejector
15	Sensor slot
16	Micro switch
17	Key sets
18	Miniature lamp
19	Miniature lamp socket
20	Coin indication panel
21	Hexagon socket head screw
22	Slam switch
23	Slam switch holder

c) Lever assembly and parts list
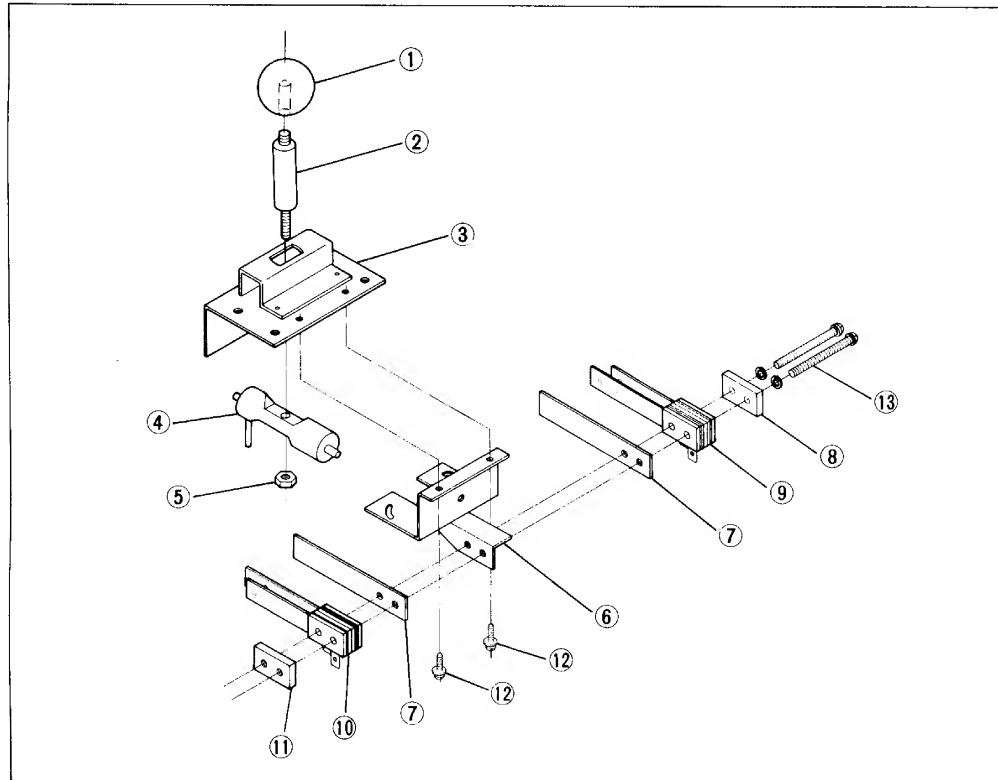
Fig. 5-5   Lever Assembly

LEVEL ASSEMBLY PARTS LIST

Ref. No.	Name
1	Knob 32-Dim.
2	Lever shaft
3	Lever guide & stopper
4	Transmission bar
5	Nut with stopper
6	Switch bracket
7	Spring
8	Spring holder
9	Blades switch
10	Blades switch
11	Spring holder with nut
12	Bolt
13	Bolt

B. COMPONENT PARTS RELATED TO SWITCHES IN THE CABINET
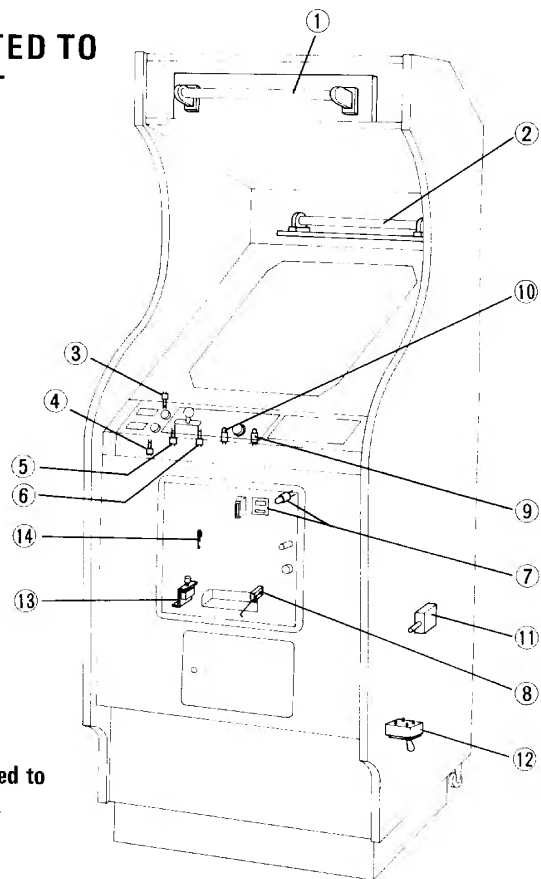
Fig. 5-6   Component Parts Related to
Switches in the Cabinet

INSIDE CABINET PARTS LIST

Ref. No.	Name
1	Fluorscent lamp assembly
2	Fluorscent lamp assembly
3	Blades switch
4	Blades switch
5	Blades switch
6	Blades switch
7	Miniature lamp assembly
8	Micro switch
9	Miniature lamp assembly
10	Miniature lamp assembly
11	Door switch
12	Toggle switch
13	Micro switch
14	Slam switch

C. CIRCUIT BOARD IC LOCATION AND PARTS LIST

a) Main circuit board IC location
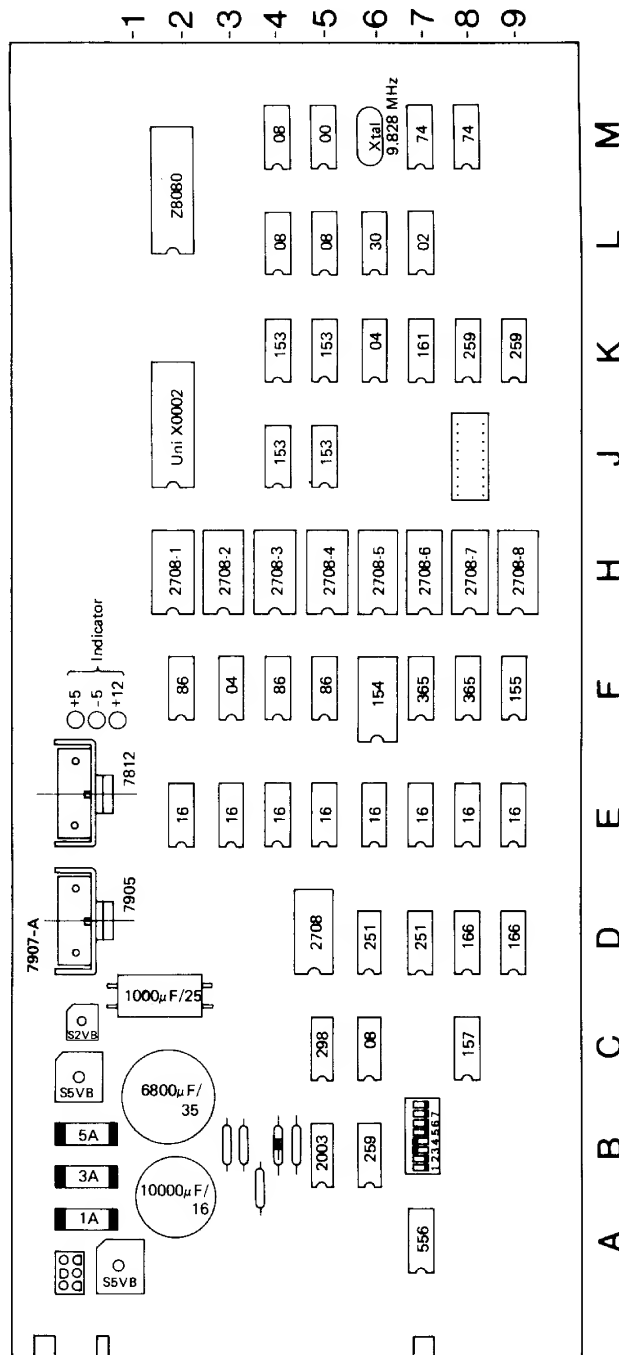
Fig. 7-1   Main Circuit Board

Note: The IC for color TV differs a little.

b) Main circuit board parts list

[1] Integrated circuit

Item No.	Q'ty	Description
SN7400N	1	Transistor Logic
02N	1	"
04N	3	"
08N	4	"
30N	1	"
74N	2	"
86N	3	"
125N	1	"
153N	4	"
154N	1	"
155N	1	"
157N	1	"
161N	1	"
166N	2	"
251N	2	"
259N	3	"
298N	1	"
365N	2	"
NE 556N	1	Dual timer
TMS4116	8	Nch mos 16k bits RAM
TMM333	2	Nch mos 32k bits ROM
Z8080	1	Nch mos CPU
UN0002	1	Nch mos CRTC
μA78H05	1	+5V voltage regurator
μA7812	1	+12V "
μA7905	1	-5V "

[2] Other semiconductor devices

Item No.	Q'ty	Description
ULN2003	2	Darlington transistor array
S5VB	2	5 Ampere rectifire bridge
S2VB	1	2 Ampere "
TLR301	3	LED (RED)
1S1588	2	Switching diode
RD7AN	1	Zener diode (7.1—7.8V Avaranche)

[3] Capacitors

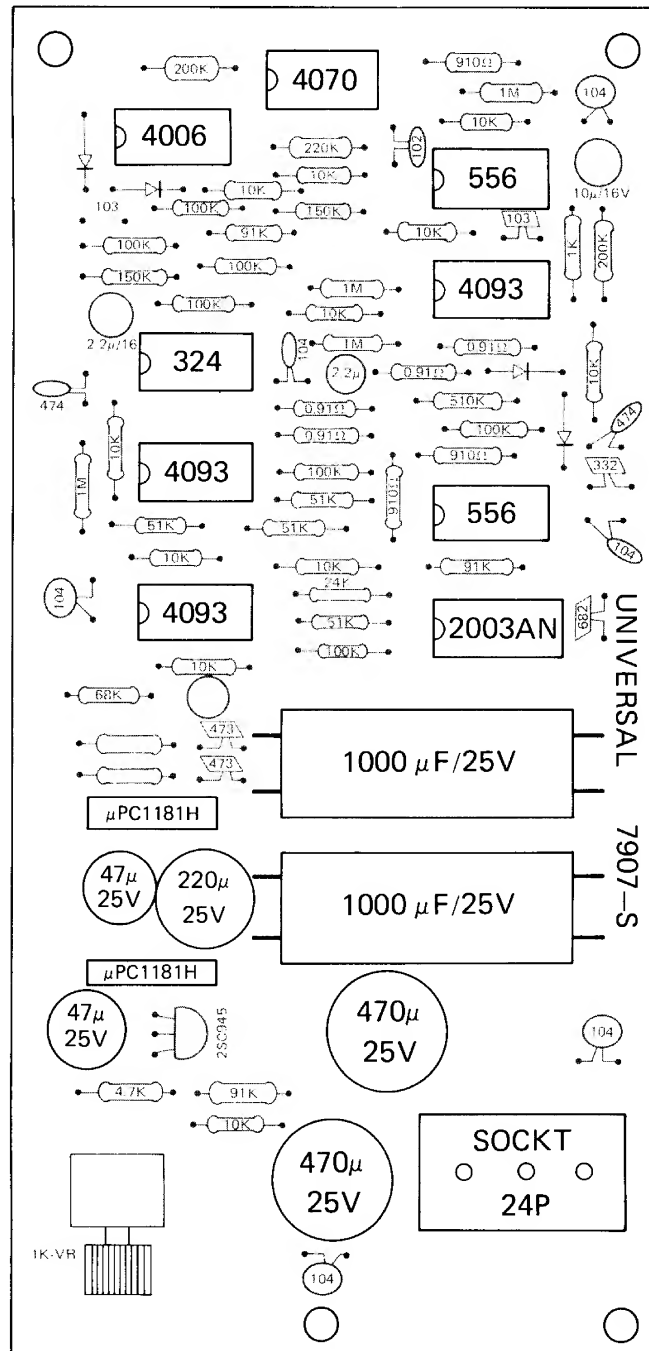| Rating	Q'ty	Description
10,000μF/16WV	1	Chemical capacitor
6,800μF/35WV	1	"
1,000μF/25WV	1	"
22μF/35WV	1	"
10μF/16WV	1	"
4.7μF/25WV	1	"
0.1μF/12WV	70	Ceramic capacitor
0.01μF/12WV	1	"
100pF/12WV	1	"

[4] Resistors

Rating	Q'ty	Description
MS1028	2	1kΩ Resistor array
200 kΩ 1/4 W	1	Carbon solid resistor
100 kΩ "	1	"
4.7 kΩ "	1	"
3 kΩ "	1	"
2 kΩ "	1	"
1.6 kΩ "	1	"
1.2 kΩ "	1	"
1 kΩ "	5	"
510 Ω "	8	"
330 Ω "	7	"
100 Ω "	1	"
10 Ω "	2	"

[5] Misc

Name	Q'ty	Description
DIP SW	1	8 element switch array
X'tal	1	9.828 MHz
Fuse	1	1A
"	1	3 A
"	1	5 A

c) Sound circuit board IC location, resistance setting and resistance location

Fig. 7-2   Sound Circuit Board

d) Sound circuit board parts list

[1]   Integrated Circuit

Item No.	Q'ty	Description
LM324	1	Quadruple Operational Amplifiers
NE556	2	Dual Timer
ULN2003	1	Darlington Transistor Array
CD4006	1	18-stage Static Shift Register
CD4070	1	Quad 2-Input EXCLUSIVE-OR Gate
CD4093	3	Quad 2-1Input NAND Schemitt Trigger
µPC1181	2	Power Amplifiers

[2]   Other Semiconductor Devices

Item No.	Q'ty	Description
1S1588	4	Switching Diode
2SC945	1	N-P-N Transistor

[3]   Capacitors

| Rating		Q'ty	Description
2.2 µF	50WV	3	Chemical Capacitor
10 µF	16WV	1	"
47 µF	25WV	2	"
220 µF	25WV	2	"
470 µF	25WV	2	"
1000 pF	12V	2	Ceramic Capacitor
0.01 µF	12V	1	"
0.1 µF	12V	3	"
0.1 µF	50V	1	"
0.0033 µF	50V	1	Polyester Film Capacitor
0.0068 µF	50V	1	"
0.01 µF	50V	1	"
0.068 µF	50V	2	"
0.47 µF	12WV	4	Tantalum Capacitor

[4]   Resistors

Rating	Q'ty	Description
1.5 Ω	2	Carbon Solid Resistor
4.7 Ω	1	"
100 Ω	4	"
1 kΩ	4	"
2.2 kΩ	1	"
4.7 kΩ	1	"
10 kΩ	10	"
22 kΩ	1	"
51 kΩ	4	"
100 kΩ	11	"
150 kΩ	2	"
200 kΩ	1	"
220 kΩ	2	"
510 kΩ	1	"
680 kΩ	1	"
1 MΩ	1	"

[5]   Misc

Name	Q'ty	Description
24P Wire Wrap Socket	1	

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VII. WIRING DIAGRAM

a) Wiring diagram (connector)
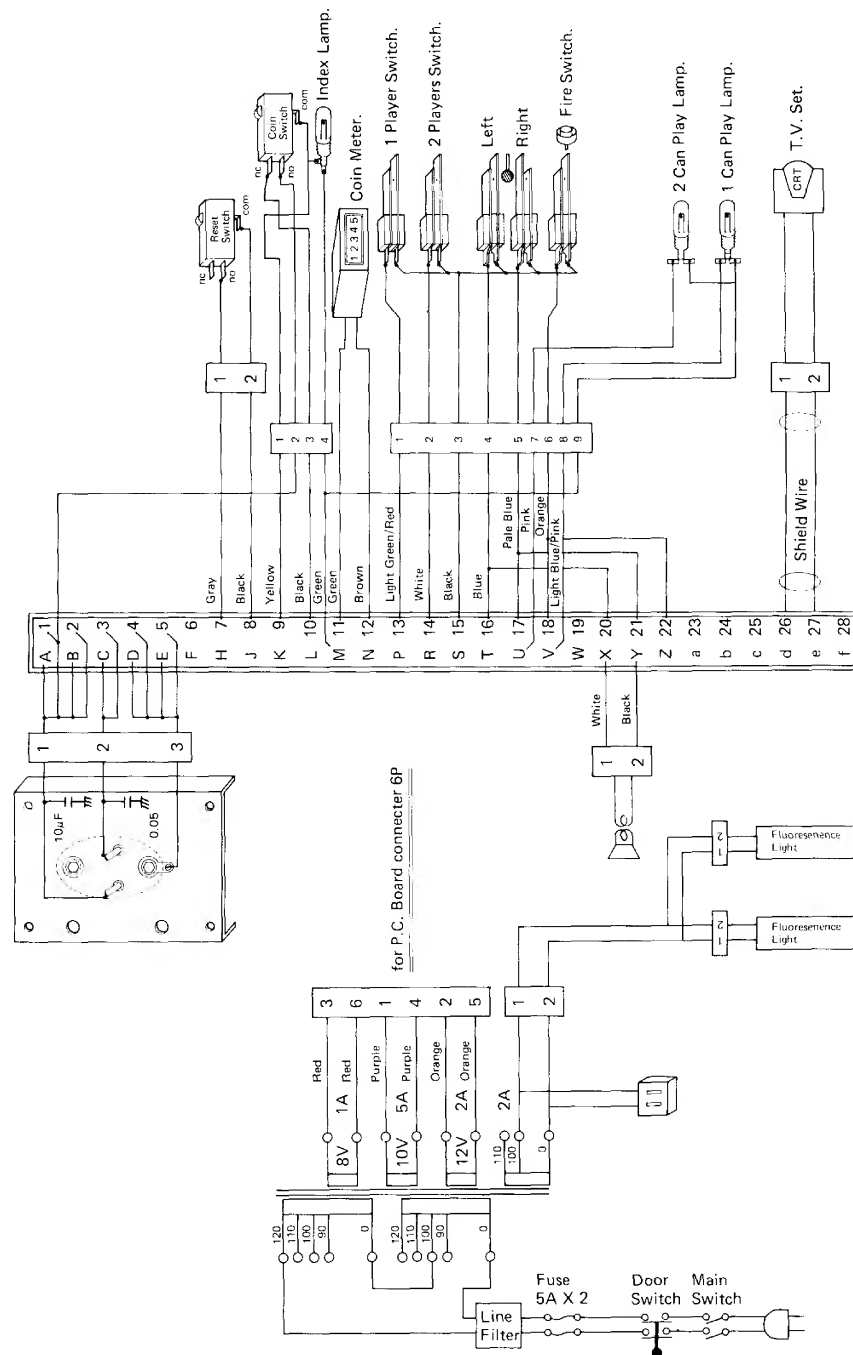
Fig. 8-1   Wiring Diagram
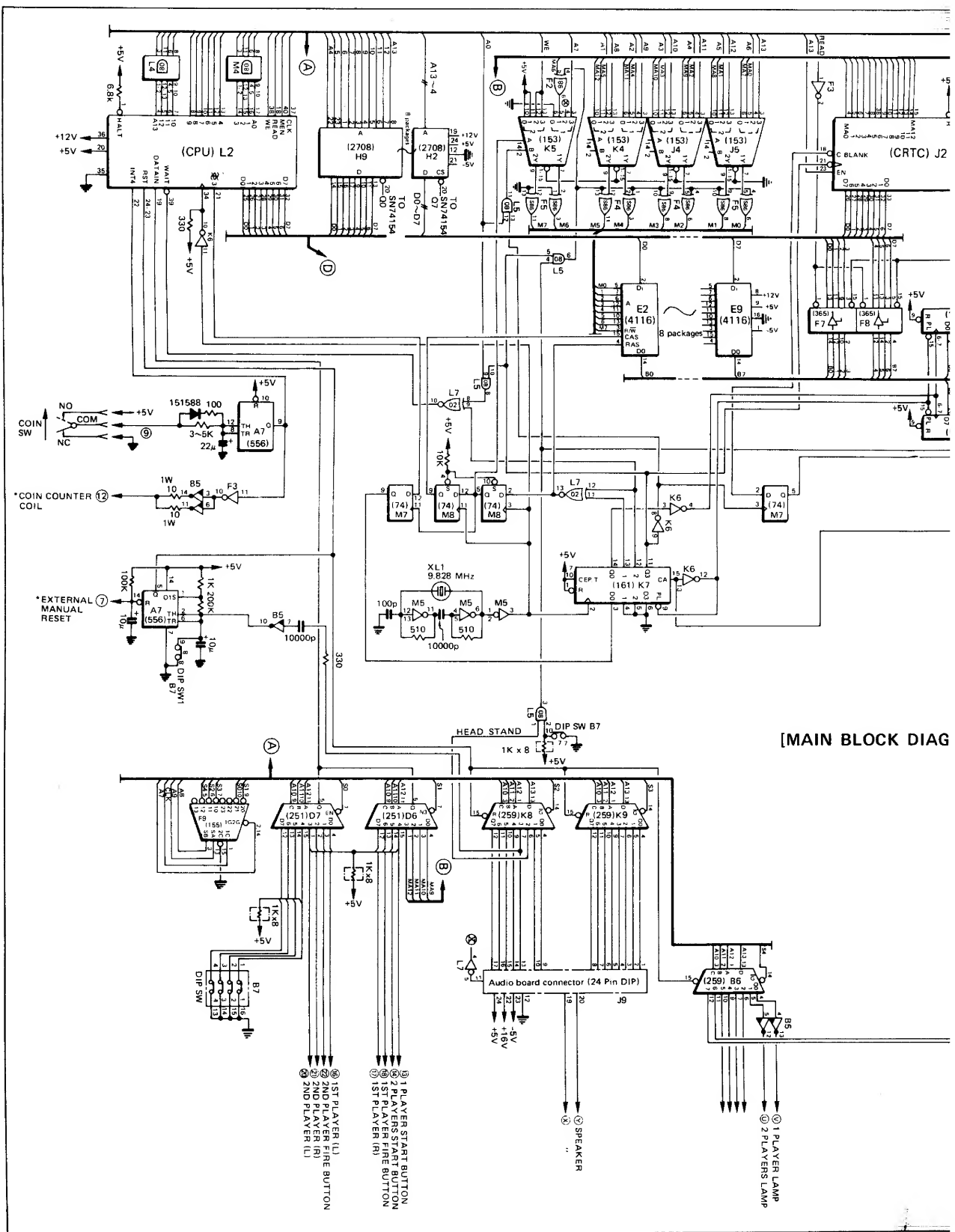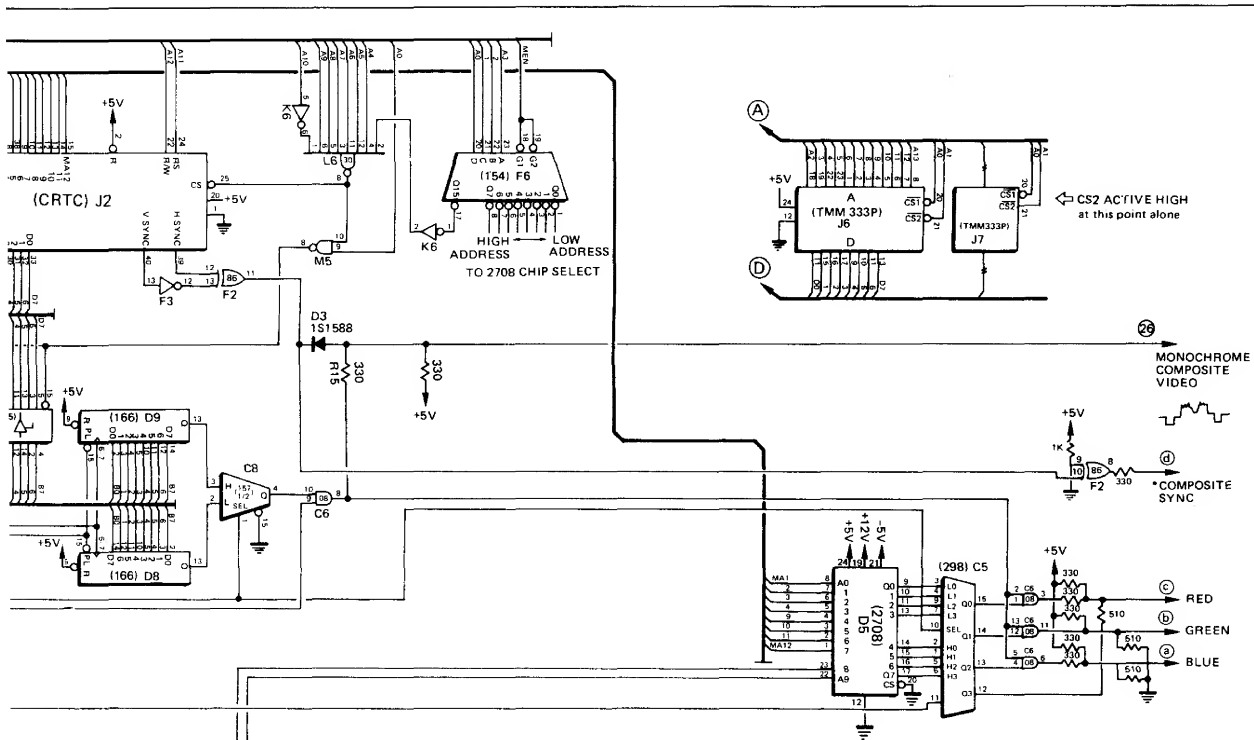
[MAIN BLOCK DIAG

[POWER SOURCE BLOCK DIAGRAM]
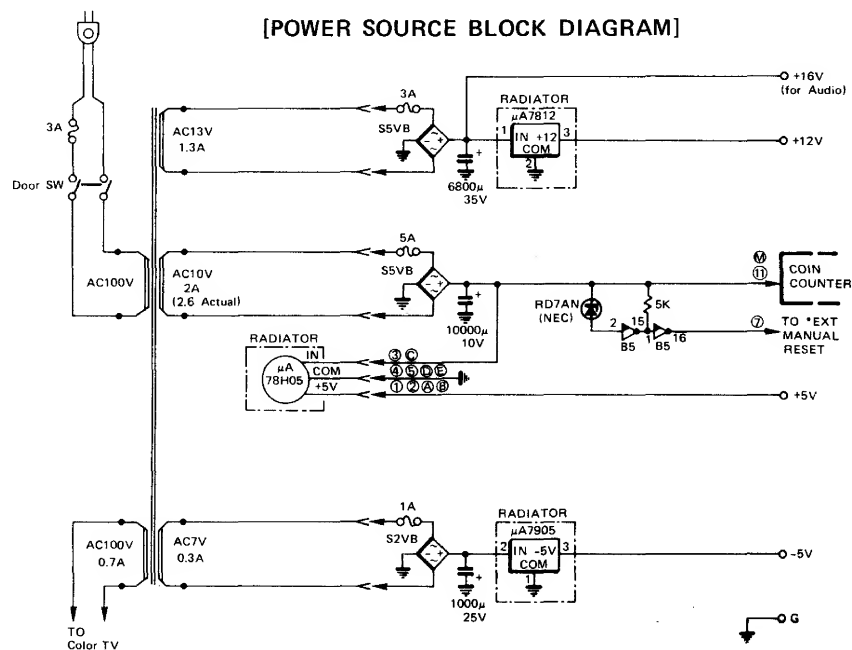
CK DIAGRAM]

COSMIC GUERILLA

7907A
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SOUND BLOCK DIAGRAM

7907B

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